



Dart Aerospace Ltd.  
1270 Aberdeen St  
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**D3391-023**  
**Job Sheet 172659**



**Part No:** D3391-023

**Job Qty:** 1 ea

**Part Name:** Mid Tube Assembly



**Part Weight:** 0 lbs

**Status:** Scheduled

**Priority:** Medium

**Job Created:** 2/21/18

**Job Tracking No:**

**Due Date:** 2/23/18

**Created By:** Michelle Gagnon-Donovan

**Type:** Stock

**Description:**

**Note:** DWG REV J SHEET 7 IPP A 05.10.20 New Issue KJ/EC IPP B IPP C 07.03.20 rev F dwg EC IPP D 07.03.28 re-format EC IPP E 07.10.31 ecn 1053P EC IPP Rev:F ECN 1056 07-11-13 DD verified by: EC IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC IPP Rev: I 08-11-13 Removed steps per w/o, QC KJ verified by: ec IPP Rev:J add in seq 140 expire date &b# sikaflex DD 10.02.17 verified by:EC

**Ship Via:**



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### Materials

**Container No:** S046948



**Part:** D3391-023

**Job No:** 172659

**Serial No/Batch:** S046948

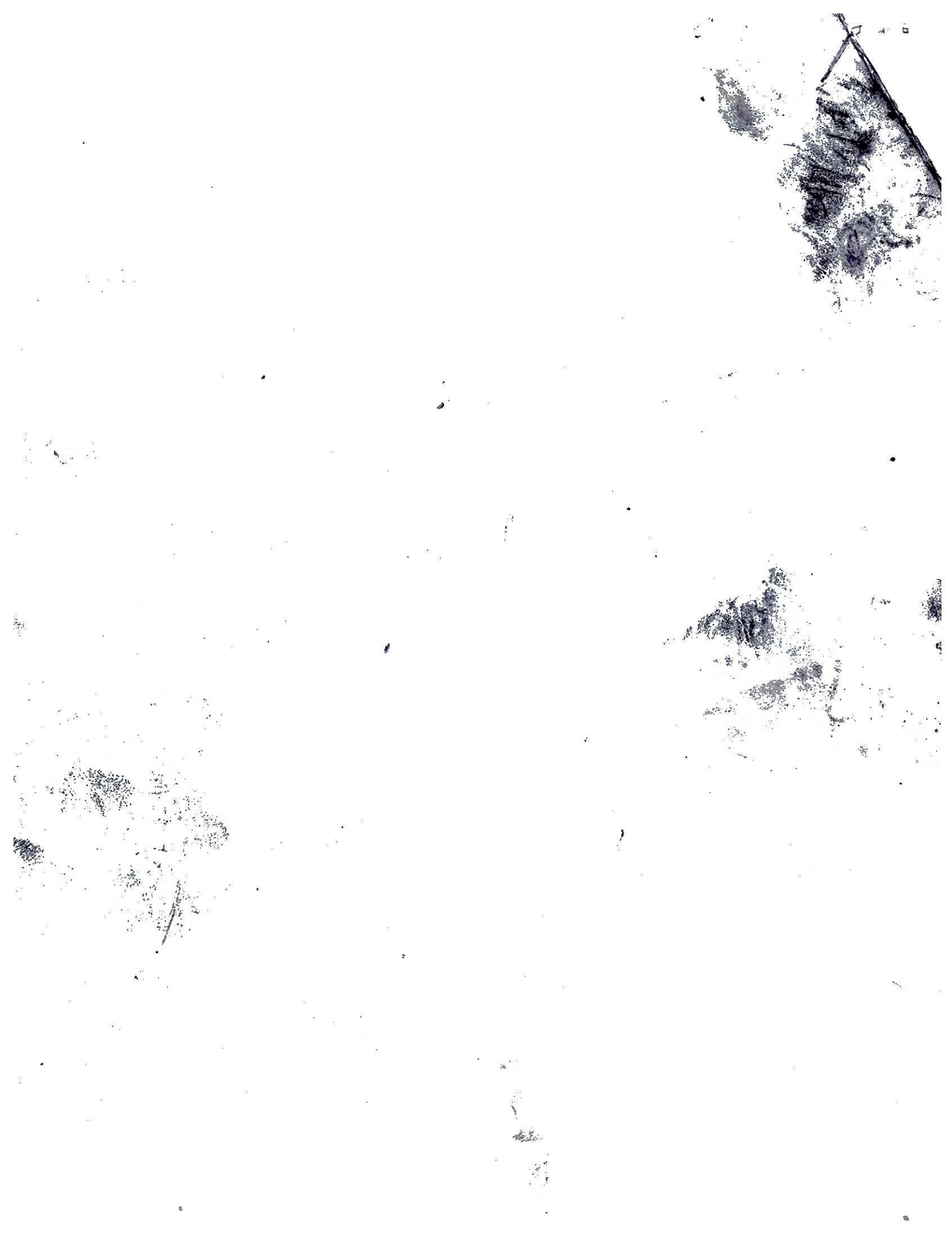
**Revision:** J

**Inspector:**

**Date:** 03/01/18

001751

S046948x1





| Job Routing |                    |       |            |          |           |         |                       |           |            |
|-------------|--------------------|-------|------------|----------|-----------|---------|-----------------------|-----------|------------|
| Op No       | Operation          | Qty   | Start Date | Due Date | Standard  |         | Workcenter/Supplier   |           | Sign-off   |
|             |                    |       |            |          | Setup hrs | Run Hrs | Workcenter / Supplier | Lead Time |            |
| 90          | Start up Operation | 1 Ea  |            | 2/22/18  | 0.00      | 0.00    | Start Up Skid tubes-1 |           | MLG        |
| 100         | Skid tubes         | 1 pcs |            | 2/22/18  | 0.88      | 2.11    | Skid tubes-4          |           | MLG DAS 38 |
| 110         | QC                 | 1 pcs |            | 2/22/18  | 0.00      | 0.00    | QC5                   |           | 38         |
| 120         | HandFinish         | 1 pcs |            | 2/22/18  | 0.00      | 0.38    | HandFinish1           |           | 18-03-88   |
| 130         | QC                 | 1 pcs |            | 2/22/18  | 0.00      | 0.00    | QC7-2                 |           | 38         |
| 140         | Skid tubes         | 1 pcs |            | 2/22/18  | 0.00      | 2.11    | Skid tubes-4          |           | 38 MLG     |
| 150         | QC                 | 1 pcs |            | 2/22/18  | 0.00      | 0.00    | QC5                   |           | 38         |
| 160         | Skid tubes         | 1 pcs |            | 2/22/18  | 0.00      | 2.11    | Skid tubes-4          |           | 38 DAS     |
| 170         | QC                 | 1 pcs |            | 2/22/18  | 0.00      | 0.00    | QC10                  |           | 38 9-88    |
| 180         | QC                 | 1 pcs |            | 2/22/18  | 0.00      | 0.00    | QC5                   |           | 38 9-88    |
| 185         | HandFinish         | 1 pcs |            | 2/22/18  | 0.00      | 0.38    | HandFinish2           |           | SA 18-3-19 |
| 191         | SprayPaint         | 1 pcs |            | 2/22/18  | 0.00      | 0.91    | Spray Paint           |           | 18-03-9338 |
| 192         | Outsource          | 1 pcs |            | 2/22/18  |           |         | ATE003-VC             |           | 18-03-16   |
| 193         | Packaging          | 1 pcs |            | 2/22/18  | 0.00      | 0.00    | Packaging2            |           | 18-03-19   |
| 200         | QC                 | 1 pcs |            | 2/22/18  | 0.00      | 0.00    | QC14                  |           | 38         |
| 230         | HandFinish         | 1 pcs |            | 2/23/18  | 0.00      | 0.38    | HandFinish4           |           | 38         |
| 240         | QC                 | 1 pcs |            | 2/23/18  | 0.00      | 0.00    | QC5                   |           | 38         |
| 250         | Packaging          | 1 pcs |            | 2/23/18  | 0.00      | 0.00    | Packaging3-1          |           | 38         |
| 260         | QC21-SA            | 1 Ea  |            | 2/23/18  | 0.00      | 0.00    | QC21                  |           | 38         |

Part Op 100 - Cut tube to finish length as per Dwg D3391-2-Drill pilot holes using DT8796 (Do not drill "B" holes) and drill only 1  
 Descriptions: fwd saddle hole on one side only as per Dwg D3391-2-Open aft saddles and GHW holes to Ø0.4375" except for fwd saddle  
 holes - Remove .030" from Fwd indexing Ridge as per Dwg D3391-5-Remove indexing ridge on Fwd & Aft end of  
 skid tube as per Dwg D3391-6-Debur, scribe batch # on aft end of skid tube - Locate D3391-021 in D3391-023 at 0.00" (see view F-  
 F-5) Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149  
 locating from previously drill .188" dia hole, using t-pins and clamps to ensure perfect alignment, open up previously transfer  
 drilled pilot holes in D3391-023/021 using drill press. ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to  
 0.500" as per ON 2ND SIDE ONLY ream out 2nd and forth saddle hole to 0.499". D3391-024  
 BATCH: N/A 9-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.375" holes with paint marker,  
 \*\*\*DO NOT DRILL HOLES #3-19-20 FROM FWD END OF JIG\*\*\* Locating from two fwd wearplate holes in D3391-023  
 drill remaining 6 wearplate holes in D3391-021 using DT8037 10- Open wearplate holes of D3391-023 assembly detail  
 section Q-Q to Ø0.375" (10 holes) as per Dwg D3391 Open wearplate holes of D3391-023 assembly detail section H-H to  
 Ø0.297" (20 holes) as per Dwg D3391 Debur and blow out all chips from inside tube, scribe  
 140 - Open float bag holes as per dwg 2-C'sink float bag holes as per dwg 3- Prepare tube for welding 4-Bond web in  
 place as per Dwg D3391 & QSI 015. Adhere for 12 hours) A/R Sikaflex exp: 2/18/04/21 batch#: 138787  
 NOTE:ENSURE WEB IS INSERTED IN AFT END OF TUBE  
 160 - 1-Weld crossbolt spacer as per dwg D3391 & QSI 004 2-grind weld flush  
 185 - Re-alodine  
 191 - PRIME AS PER DWG AND QSI005 4.2.1.3.3 PRIMER BATCH: PAINT AS PER DWG AND  
 QSI005 4.2.2.4 PAINT:  
 230 - 1-Install Inserts as per Dwg

| Job BOM       |                     |               |                       |           |
|---------------|---------------------|---------------|-----------------------|-----------|
| Part / Item   | Component Name      | Quantity      | Operation             | Container |
| D2500-1-100   | Skid tube Extrusion | 1 Ea (1 ea)   | 90-Start up Operation |           |
| D3389-1       | Web                 | 1 Ea (1 ea)   | 140-Skid tubes        |           |
| D3681-1       | Spacer              | 5 Ea (5 ea)   | 160-Skid tubes        |           |
| ALS4-1032-130 | Rivnut              | 20 Ea (20 ea) | 230-HandFinish        |           |
| D3591-1       | Bushing             | 2 Ea (2 ea)   | 230-HandFinish        |           |

| Job Allocations       |                       |          |           |           |
|-----------------------|-----------------------|----------|-----------|-----------|
| Operation             | Component Part        | Required | Inventory | Allocated |
| 90-Start up Operation | D2500-1-100 B163553   | 1        | 68        | 0         |
| 140-Skid tubes        | D3389-1 50189128      | 1        | 9         | 0         |
| 160-Skid tubes        | D3681-1 5019127       | 5        | 369       | 0         |
| 230-HandFinish        | ALS4-1032-130 5007252 | 20       | 8,146     | 0         |
|                       | D3591-1 5026944       | 2        | 75        | 0         |

| Part Specifications                |  |  |  |  |
|------------------------------------|--|--|--|--|
| Specifications could not be found. |  |  |  |  |



# D3391-041/-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

| QTY<br>-041 | QTY<br>-043 | PART NUMBER   | DESCRIPTION             |
|-------------|-------------|---------------|-------------------------|
| X           |             | D3391-041     | FLOAT SKIDTUBE ASSEMBLY |
|             | X           | D3391-043     | FLOAT SKIDTUBE ASSEMBLY |
| 1           |             | D3391-011     | FWD TUBE ASSEMBLY       |
| 1           |             | D3391-013     | MID TUBE ASSEMBLY       |
| 1           |             | D3391-015     | AFT TUBE ASSEMBLY       |
|             | 1           | D3391-021     | FWD TUBE ASSEMBLY       |
|             | 1           | D3391-023     | MID TUBE ASSEMBLY       |
|             | 1           | D3391-025     | AFT TUBE ASSEMBLY       |
| 2           | 2           | D3591-1       | BUSHING                 |
| 4           |             | D3672-3       | WASHER                  |
| 1           | 1           | D4095-041     | WEARSHOE                |
| 1           | 1           | D4095-043     | WEARSHOE                |
| 1           | 1           | D4095-045     | WEARSHOE                |
| 1           | 1           | D4095-047     | WEARPAD                 |
| 1           | 1           | D4095-049     | WEARPAD                 |
| 1           | 1           | D4095-051     | WEARSHOE                |
| 24          | 24          | AN3C4A        | BOLT                    |
| 4           | 4           | AN3C8A        | BOLT                    |
| 10          | 10          | AN5C7A        | BOLT                    |
| 28          | 28          | NAS1149C0332R | WASHER                  |
| 10          | 10          | NAS1149C0332R | WASHER                  |
| 4           |             | MS27039C4-12  | SCREW                   |
| 4           |             | NAS1149C0432R | WASHER                  |

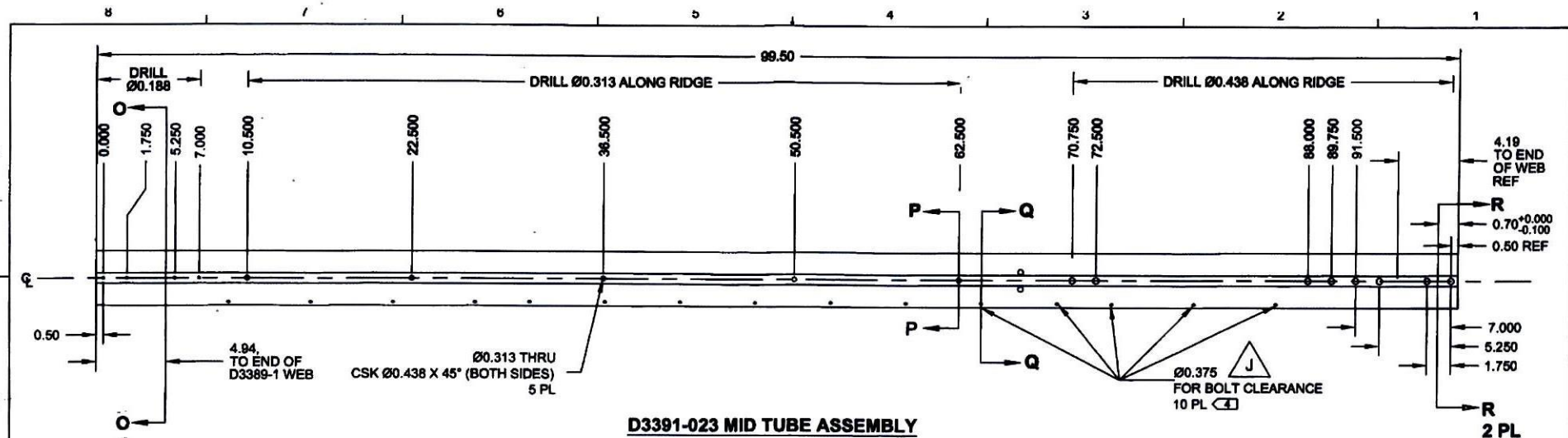
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NO. 172659 *mt*

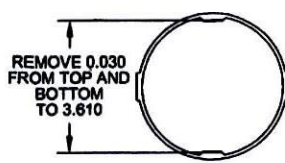
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|            |                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                        |               |
|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| J          | INCORPORATED DSI 9733, REFORMAT DRAWING<br>CHANGED CBORE DEPTH (ZN D2-8, D2-9), REVISED<br>TABLES, REPLACED POWDER COAT WITH PAINT                                                                                                                                                                  | ML                                                                                                                                                                                                                                                                                     | 16.01.14      |
| I          | REMOVE GASKETS AND REPLACE ALL WEARSHOES;<br>PARTS LIST UPDATE, ZN A8-1, ZN A8-2, ZN A8-4,<br>ZN B8-8; LPS-3 COATING REMOVED FROM NOTE 2,<br>ZN A3-1, ZN A3-2, REMOVED INSERT AELS-1032-130,<br>ZN B8-4, B2-4, C7-8, C3-8; REMOVED HOLES, ZN D6-4<br>ZN D2-4, ZN D7-8, ZN D3-8                      | XDF                                                                                                                                                                                                                                                                                    | 11.10.13      |
| H          | DRAWING UPDATED TO CURRENT STANDARDS.<br>SHT 1 PL ADDED D3591-1 BUSHING. ZN C8 Ø0.438 DIM<br>WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING.<br>SHT 2 PL ADDED D3591-1 BUSHING. ZN C8 Ø0.438 DIM<br>WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING.<br>(FOR FURTHER INFO SEE DSI 9364 & NCR 08-074) | AJS                                                                                                                                                                                                                                                                                    | 08.08.20      |
| G          | REPLACE NAS INSERTS W/ AELS INSERTS<br>SWITCH TO D3670-XXXX SPACERS FOR INSTALLING<br>FLOAT BAGS, DWG REORGANIZED FOR CLARITY                                                                                                                                                                       | DC                                                                                                                                                                                                                                                                                     | 07.07.31      |
| F          | ADD SS WEARSHOE, GASKET<br>REMOVE FWD SADDLE HOLE -011/-021                                                                                                                                                                                                                                         | PH                                                                                                                                                                                                                                                                                     | 07.01.18      |
| E          | CHANGE TOLERANCE, EASE MANUFACTURE                                                                                                                                                                                                                                                                  | PH                                                                                                                                                                                                                                                                                     | 08.04.25      |
| D          | UPDATE TOLERANCE, CHANGE HOLE SIZE                                                                                                                                                                                                                                                                  | PH                                                                                                                                                                                                                                                                                     | 08.01.23      |
| C          | LENGTHEN AFT EXTENSION                                                                                                                                                                                                                                                                              | PH                                                                                                                                                                                                                                                                                     | 05.09.27      |
| B          | DRAWING UPDATES                                                                                                                                                                                                                                                                                     | PH                                                                                                                                                                                                                                                                                     | 05.08.10      |
| A          | NEW ISSUE                                                                                                                                                                                                                                                                                           | PH                                                                                                                                                                                                                                                                                     | 05.02.07      |
| REV        | DESCRIPTION                                                                                                                                                                                                                                                                                         | BY                                                                                                                                                                                                                                                                                     | DATE          |
| DESIGN     | PH                                                                                                                                                                                                                                                                                                  | DART AEROSPACE USA, INC                                                                                                                                                                                                                                                                |               |
| DRAWN      | ML                                                                                                                                                                                                                                                                                                  | EUGENE, OR                                                                                                                                                                                                                                                                             |               |
| CHECKED    | CP                                                                                                                                                                                                                                                                                                  | DRAWING NO.                                                                                                                                                                                                                                                                            | REV. J        |
| MFG. APPR. | <i>DP</i>                                                                                                                                                                                                                                                                                           | D3391                                                                                                                                                                                                                                                                                  | SHEET 1 OF 11 |
| APPROVED   | <i>ELG</i>                                                                                                                                                                                                                                                                                          | TITLE                                                                                                                                                                                                                                                                                  | SCALE         |
| DE APPR.   | <i>SH</i>                                                                                                                                                                                                                                                                                           | 412 FLOAT SKIDTUBE                                                                                                                                                                                                                                                                     | NTS           |
| DATE       | 16.01.14                                                                                                                                                                                                                                                                                            | COPYRIGHT © 2005 BY DART AEROSPACE USA, INC<br>THIS DOCUMENT IS FINALLY AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS<br>NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT<br>WRITTEN PERMISSION FROM DART AEROSPACE USA, INC. |               |

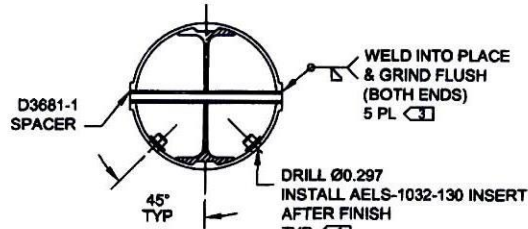
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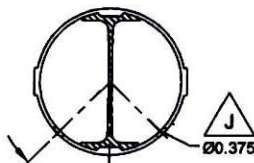
**D3391-023 MID TUBE ASSEMBLY**



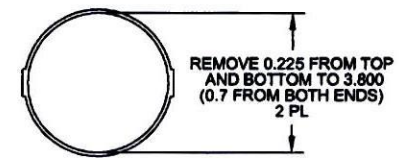
**SECTION O-O**  
SCALE 2X



**SECTION P-P**  
SCALE 2X



**SECTION Q-Q**  
SCALE 2X <4>



**SECTION R-R**  
SCALE 2X

**D3391-023 MID TUBE ASSEMBLY PARTS LIST**

| QTY -023 | PART NUMBER   | DESCRIPTION       |
|----------|---------------|-------------------|
| X        | D3391-023     | MID TUBE ASSEMBLY |
| 1        | D2500-1-100   | EXTRUSION         |
| 1        | D3389-1       | WEB               |
| 5        | D3681-1       | SPACER            |
| 20       | AELS-1032-130 | INSERT            |



- D3391-023 MID TUBE ASSEMBLY**
- 1) MATERIAL: MAKE FROM D2500-1-100
  - 2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
  - 3) WELDING: PER DART QSI 004
  - 4) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 AND Ø0.375 HOLES FOR WEARSHOE INSERTS AND NUTPLATES. BORE AS NOTED AND INSTALL INSERT/NUTPLATES EXCEPT WHERE INDICATED.

|            |          |
|------------|----------|
| DESIGN     | PH       |
| DRAWN      | ML       |
| CHECKED    | CP       |
| MFG. APPR. |          |
| APPROVED   |          |
| DE APPR.   |          |
| DATE       | 16.01.14 |

|                                                                                                                                                                                                                                                                                             |                         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| <b>DART AEROSPACE USA, INC</b><br>EUGENE, OR                                                                                                                                                                                                                                                |                         |
| DRAWING NO.<br>D3391                                                                                                                                                                                                                                                                        | REV. J<br>SHEET 7 OF 11 |
| TITLE<br>412 FLOAT SKIDTUBE                                                                                                                                                                                                                                                                 | SCALE<br>NTS            |
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